

We claim:

1. A method for starting or stopping each of at least two separately controllable roll-sets used for processing a yarn Y in a stretch-break process, each roll-set comprising at least two rolls, the method comprising the step of:
for each roll-set, changing the speed of each roll from an initial condition to a steady state condition in accordance with a predetermined sequence and in coordination with a change in speed of at least one of the other rolls, such that simultaneous complete breakage of a yarn Y being processed in a stretch-break process is minimized.
2. The method of claim 1, wherein the speed of each roll is changed to the steady state in at least two discrete steps.
3. The method of claim 1, wherein the speed of each roll is changed to the steady state in a continuous manner.
4. The method of claim 1 wherein the initial condition is a stopped condition.
5. The method of claim 1 wherein each roll-set is comprised of each pair of adjacent rolls that sequentially contact the yarn Y.
6. The method of Claim 1 wherein during the stretch-break process a yarn Y is annealed, the method further comprising the step of selecting at least one annealing temperature.

7. The method of claim 1 wherein the stretch-break process includes at least three rolls (26, 34, 56), and wherein the predetermined sequence is created
5 by the steps of:

a) selecting a candidate speed for each of the three rolls;

b) validating the candidate speed for each roll against predetermined operability criteria; and

10 c) for speeds that meet the operability criteria, setting the speed for each of the three rolls.

8. The method of claim 7 wherein each roll-set is
15 comprised of each pair of adjacent rolls that sequentially contact the yarn Y.

9. The method of Claim 7 wherein the stretch-break process includes at least one jet or
20 consolidation device (32, 36, 52), the method further comprising the step of:

selecting at least one operating parameter for the jet.

25 10. The method of Claim 9 wherein during the stretch-break process a yarn Y is annealed, the method further comprising the step of selecting at least one annealing temperature.

30 11. The method of Claim 9 wherein the jet operating parameter comprises an operating pressure and wherein the operating pressure is selected in at least two discrete steps.

12. The method of Claim 11 further comprising the step of:

changing the operating pressure to each of the two pressure steps in coordination with the change in speed
5 of at least one of the rolls.

13. The method of Claim 9 wherein the jet operating parameter comprises an operating pressure and wherein the operating pressure is selected as a
10 continuous range of pressures.

14. The method of Claim 13 further comprising the step of:

changing the operating pressure through the
15 range in coordination with the change in speed of at least one of the rolls.

15. The process of claim 8 wherein the stretch break process includes a winder operable to collect the
20 yarn under tension on a bobbin, the method further comprising the step of selecting the tension imposed on the yarn by the winder.

16. The process of claim 8 wherein the candidate
25 operating speed is selected using a graphic display interface, the interface displaying a diagram of the process and having windows for entry of the operating speed.

30 17. The process of claim 16 where each predetermined operability criteria is compared to each candidate operating speed entry and the results of the comparison is displayed in a visual manner to indicate

the speed meeting or exceeding the predetermined operability criteria.

18. The process of claim 11 wherein the candidate
5 operating pressure is selected using a graphic display interface, the interface displaying a diagram of the process and having windows for entry of the operating pressure.

10 19. The process of claim 18 where each predetermined operability criteria is compared to each candidate operating pressure entry and the results of the comparison is displayed in a visual manner to indicate the pressure meeting the predetermined
15 operability criteria.